



# IN PURSUIT OF CLEAN AIR

April 2004

A Review of State and Federal  
Policies Affecting  
New Jersey's Air Quality

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# **The Problems of Air Pollution**

Air pollution in New Jersey is a serious public health and environmental problem that affects every resident and must be addressed.

Every day, thousands of New Jersey residents suffer from asthma and other respiratory ailments due to exposure to ozone and fine particulates in our air. Hundreds of unborn and young children are placed at risk of developmental and learning disabilities from fish contaminated by mercury deposited in aquatic ecosystems from airborne sources. And each summer, every resident of New Jersey suffers from a lesser quality of life due to ozone-containing smog and haze diminishing the enjoyment of the outdoors. Indeed, the risks and hazards of these various pollutants have long been known and are too significant to ignore.

## Ozone

Ozone occurs naturally in the upper regions of the atmosphere and is critical to shielding the Earth from harmful ultraviolet radiation. However, in the lower atmosphere, where the air we breathe lies, ozone is a harmful air pollutant, contributing to the formation of smog. Ground-level ozone is formed when pollutants emitted by automobiles and industrial facilities react in the presence of sunlight. Ozone pollution is especially of concern during the summer months when the weather conditions needed to form elevated levels of ground-level ozone normally occur.

Ozone exposure can cause several health effects, including irritation of the lungs, increased incidents of asthma, reduced lung function, and aggravation of chronic lung diseases. Increased ozone and smog concentrations severely affect the quality of life for susceptible populations – small children, the elderly, and asthmatics – and present health risks for everyone. Attaining the new federal health standard for ozone in New Jersey would eliminate about 40,000 asthma attacks each year and substantially reduce hospital admissions and emergency room visits among children and adults with asthma and other respiratory diseases.

## Fine Particulates

Fine particulate matter, also referred to as PM<sub>2.5</sub>, is a mixture of fine liquid and solid particles such as dust, smoke, mist, fumes or smog that pollutes the air and causes serious health problems. These particles are often so tiny that several thousand could fit on the period at the end of this sentence. The fine particulate problem in New Jersey comes from sources such as diesel-powered engines that directly emit particles and from upwind power plants that emit gases that are converted to particles as they travel downwind to New Jersey. A major contributor of particulates from in-state sources is diesel exhaust (from on-road vehicles such as trucks, buses and from off-road equipment such as bulldozers, excavators and loaders).

Fine particulate matter poses significant health threats because it can easily reach deep into the lungs. Studies link particulate matter to a host of health problems, including premature death, aggravated asthma, labored breathing and other respiratory ailments that require emergency-room care or hospitalization. Those most at risk include the elderly, people with asthma or pre-existing heart or lung disease, and children. The elderly are especially at risk for premature death from the effects of particulate matter.

In New Jersey every year, exposure to fine particulate levels above the federal health standard results in an estimated 350 to 1,200 deaths; 6,000 emergency room visits; and 68,000 asthma attacks. This death rate is comparable to the number of deaths from motor vehicle accidents (approximately 730 annually in New Jersey) and homicides (approximately 300 annually).

Health risks are higher for populations living near roadways and in urban areas. Fine particulate levels are higher in these areas primarily due to diesel exhaust emissions. The United States Environmental Protection Agency (EPA) has classified diesel exhaust as likely to be carcinogenic to humans by inhalation at environmental exposures. The EPA has also identified diesel particulate matter and diesel exhaust organic gases as air toxics.

### Air Toxics

Air toxics are pollutants that are likely to be emitted into the air in quantities that are large enough to cause adverse health effects. These effects cover a wide range of conditions from lung irritation to birth defects to cancer. There are no national air quality standards for these pollutants, but in 1990 the U.S. Congress directed the EPA to begin to address a list of almost 200 of these air toxics by developing control technology standards.

Exposure to air toxics is a widespread problem that occurs throughout the entire state. These pollutants come from a wide variety of sources, including industrial and utility sources, smaller manufacturing and commercial sources, mobile sources (such as cars, trucks and buses), residential activities (such as oil burning for home heating and painting houses), and construction equipment.

Mercury is an example of an air toxic that creates especially serious health problems. Over 2,000 pounds (one ton) of mercury are emitted every year by New Jersey's coal-fired power plants, municipal solid waste incinerators, and iron/steel scrap-melters, accumulating on land and in water throughout the state. Nationally, coal-fired plants alone emit about 48 tons of mercury annually – more than 60 percent of the mercury emitted from all human activity.

Humans ingest mercury primarily through consumption of fish and shellfish. As a result of mercury accumulated over many years in the bodies of women of childbearing age, many children are born with attention or memory deficit or are handicapped in their ability to see, to speak, or to be active. Even exposure to low levels of mercury can permanently damage the brain and nervous system and cause behavioral changes. In New Jersey, more than one in 10 pregnant women have concentrations of mercury in their hair samples that exceed safe levels. If New Jersey could reduce mercury exposure to safe levels for even half of these women, 14 newborns per day could be saved from the threat of developmental abnormalities linked to mercury.

With all these pollutants – ozone, fine particulates, and air toxics – the bottom line is that more must be done to protect the health and safety of our families and communities. Under Governor James E. McGreevey's leadership, New Jersey is becoming a national leader in the fight for clean air.

## Ozone Nonattainment Areas

On Thursday, April 15, 2004, the EPA announced that part or all of 474 counties nationwide failed to attain the new, more stringent federal standard for ozone levels in the air. The previous ozone standard, in place since 1979, allowed for maximum ozone levels of 0.12 parts per million (ppm) concentration averaged over one hour (1-hour standard). The new standard, set during the Clinton Administration, responded to scientific research that revealed significant health problems could be caused by long-term exposure to lower levels of ozone. Thus, the federal government set a new maximum ozone standard of 0.080 ppm concentration averaged over eight hours (8-hour standard).

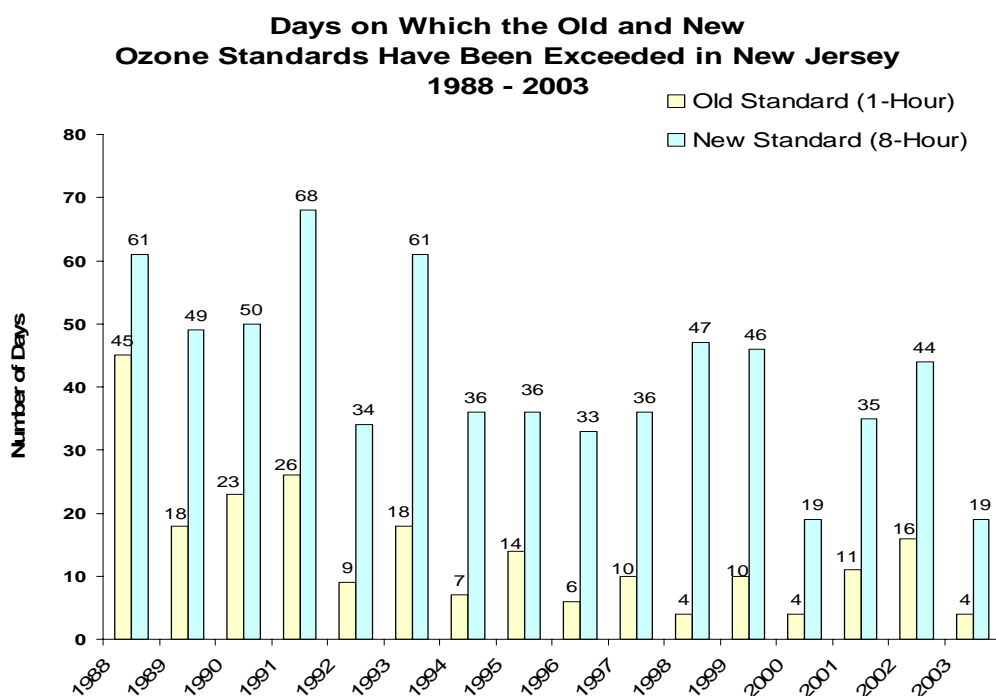


Figure 1. Annual number of days New Jersey exceeded or would have exceeded the old and new ozone standards (Source: NJDEP)

Much of New Jersey's ozone comes from nitrogen oxides (NO<sub>x</sub>) emitted by power plants and industrial facilities upwind of the state. The wind can transport this air pollution hundreds of miles. In five states – New Jersey, Massachusetts, Connecticut, Rhode Island, and Delaware – all counties fail to meet the new standard. Not surprisingly, all five states are downwind of polluting power plants and industrial facilities in the Midwest and Southeast.

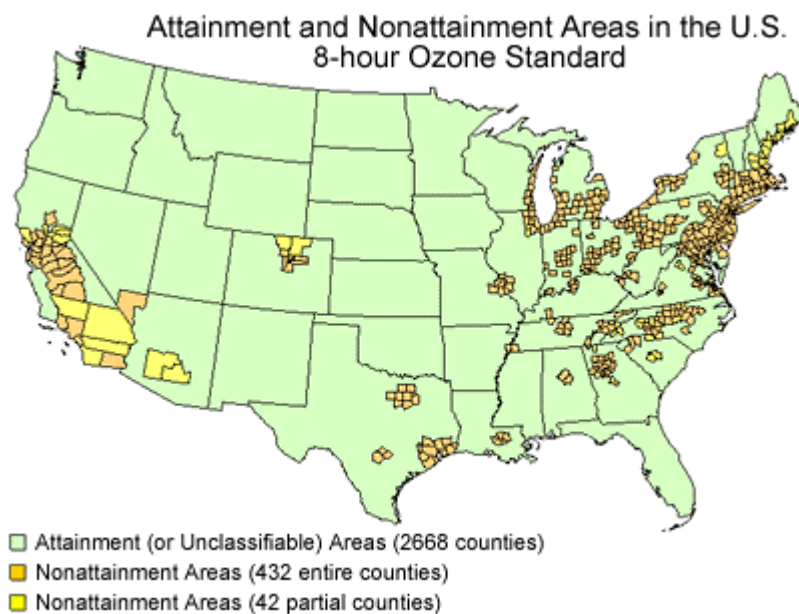


Figure 2. Attainment/Nonattainment Counties in the U.S. (Source: EPA website)<sup>1</sup>

To address nearby upwind sources, under the Clean Air Act, the EPA designates a nonattainment area in which certain control measures are required. That area includes counties that either do not meet the air quality standard or that significantly contribute to ambient air quality in a nearby area that does not meet the standard. The EPA solicited input from states about what areas should or should not fall into a nonattainment area. New Jersey recommended that the state be divided into two multi-state nonattainment areas: one northern area associated with New York City and Connecticut and a southern area associated with the broader Philadelphia, Pennsylvania, and Delaware region.<sup>2</sup>

Although facilities in places much further from New Jersey harm the state's air quality, those places are not included in either of New Jersey's nonattainment areas. Indeed, those places may not even suffer from unhealthy air quality because tall smokestacks minimize the local facilities' impact on local air quality. For that reason, those upwind facilities frequently are not subject to the same strict air pollution control requirements that the Clean Air Act requires New Jersey to impose.

<sup>1</sup> <http://www.epa.gov/ozonedesignations/nonattaingreen.htm>

<sup>2</sup> EPA's final designations made one significant change from previous nonattainment area designations for the 1-hour ozone rule. Ocean County, which consistently has some of the worst air quality in the state due to pollutants blown east from out-of-state sources, was placed in the Philadelphia nonattainment area, as New Jersey had recommended. This change provides a more sensible framework for addressing the causes of the high ozone concentrations in Ocean County. Under the current 1-hour ozone standard Ocean County had been part of the New York Nonattainment Area.

EPA classifies ozone nonattainment areas based on the severity of their ozone problem. Classified areas fall into five categories: marginal, moderate, serious, severe, or extreme. Nonattainment areas with higher classifications must impose stricter requirements on local sources of air pollution, must meet additional requirements from the EPA, and will have later attainment deadlines. By virtue of its moderate classification, New Jersey must meet a deadline of June 2010 to attain the 8-hour standard. Furthermore, the state must submit a plan by June 2007, explaining how the state will achieve emission reductions of pollutants that contribute to ozone concentrations.

New Jersey has high ozone concentrations, particularly in the southern part of the state. Meeting the new standard at these higher concentration sites will require a reduction of about 0.02 ppm in order to reach the 0.080-ppm standard. Nevertheless, despite the difficulties, successfully meeting the new standards represents an important step for improving public health in New Jersey. New Jersey's residents face serious health risks from high concentrations of ozone.

Governor McGreevey has committed to fighting the battle for cleaner air in New Jersey on two fronts. First, the state will take strong, cost-effective steps to reduce emissions within its borders, building on the progress made since the 1990 Clean Air Act Amendments. Second, the state will continue to fight for strong regulation, enforcement, and leadership at the federal level to reduce emissions outside New Jersey's borders. New Jersey residents will never have healthy air to breathe unless the nation takes advantage of the enormous cost-effective reductions available upwind. Continued pollution from power plants and other facilities in the Midwest and Southeast will otherwise overwhelm what progress we can make within our borders.

## Federal Air Quality Policies

Strong federal leadership must complement New Jersey's work to control air pollution within its borders. Unfortunately, recent federal action has taken us in the wrong direction, reversing much of the progress made over more than two decades and rolling back several of the most important safeguards and protections necessary to improve the quality of our air. These rollbacks are preventing the states from attaining the protective standards and jeopardizing the health of thousands of New Jersey residents, who continue to suffer needlessly from pollution related ailments.

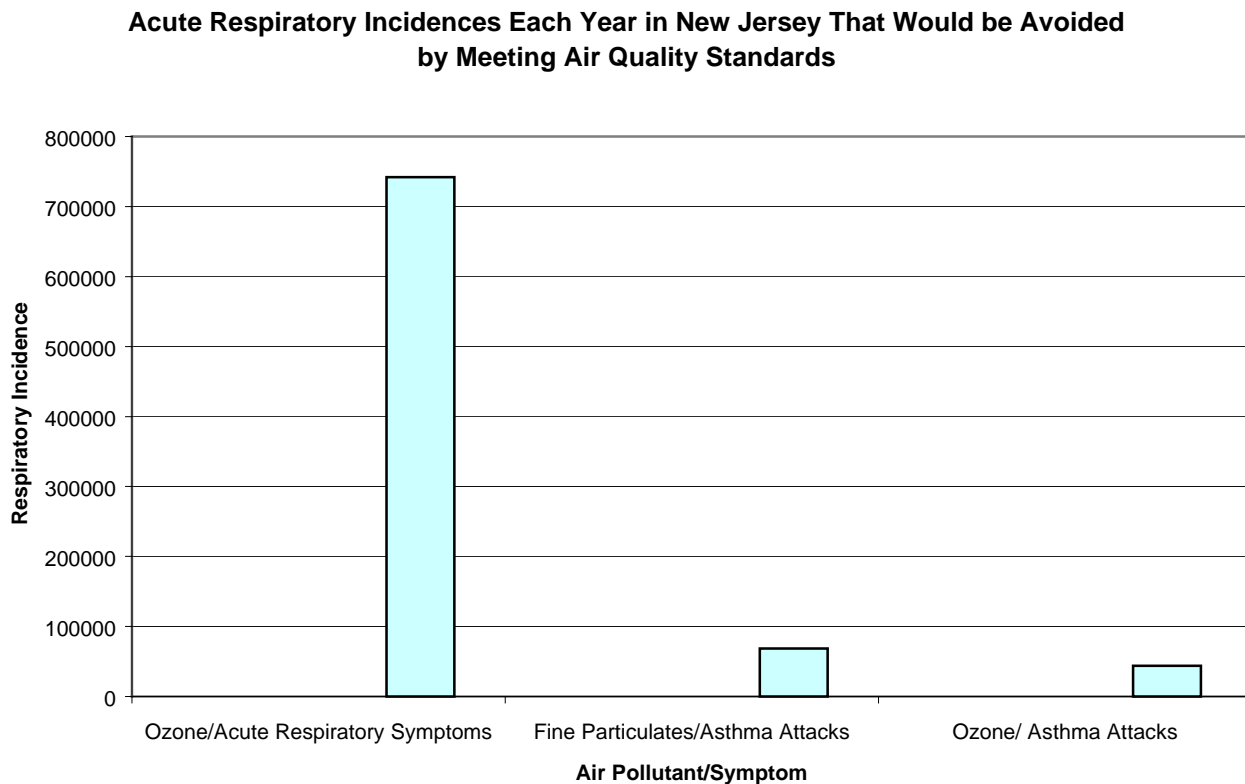


Figure 3. Acute Respiratory and Asthma Incidences That Would Be Avoided if New Jersey Met Ozone and Fine Particulate Air Quality Standards (Source: NJDEP)

### New Source Review Rules

The New Source Review (NSR) requirements of the Clean Air Act offer one of the most powerful tools to eliminate air pollution and one of the clearest examples of federal rollbacks that jeopardize the abilities of states to reduce emissions of several types of air pollutants. NSR requires a facility to install the best available control technology (BACT) for air pollution when it undergoes an upgrade or other modification.

In 1999, the federal government filed 51 lawsuits against coal-fired power plants in ten Midwestern and Southeastern states. The lawsuits listed endless examples of upgrades and

modifications to the plants that triggered NSR and should have brought those plants modern air pollution controls. A few of those lawsuits have been settled, so that at least some plants will be cleaned up or replaced with cleaner, more efficient technology. Other lawsuits continued working their way through the judicial process.

Yet in two separate rulemakings in 2002 and 2003, the current EPA all but eliminated NSR for existing facilities, bringing much of the progress toward settling NSR cases to a halt. Under the new rules, power plant overhaul projects with price tags in the hundreds of millions of dollars are now redefined as “routine maintenance, repair and replacement” – and exempt from NSR. In effect, these changes allow polluting facilities to operate indefinitely and to replace almost all their equipment without ever cleaning up their emissions.

In promulgating these rules, the EPA began with a fundamental error: the belief that the current rules result in “lost opportunities to improve energy efficiency and reduce air pollution.” In fact, the new rules would encourage relatively trivial improvements in energy efficiency at the cost of drastic increases in air pollution from older plants that seldom operate currently because they are run-down, inefficient, require excessive maintenance, and may be unsafe. The new rules encourage the owners of these plants to spend whatever it takes to restore these plants so that they can run (and pollute) far more than their current condition allows. Restoring the old plant will be cheaper than building a new plant, because the new plant will require more money to build and to operate the air pollution controls that the old plant need not install.

The federal Government Accounting Office (GAO) has issued two recent reports to Congress on New Source Review. The GAO August 2003 report found that “EPA relied primarily on anecdotes from industries most affected by NSR to conclude that it discouraged some energy efficiency projects.” The second GAO report of February 2004, found that most state air pollution control officials expected the EPA’s first relaxation of the NSR rules in December 2002 would “increase emissions of harmful air pollutants, thereby hindering areas’ efforts to meet air quality standards and potentially creating or exacerbating public health risks.” This GAO report also found that most state air pollution control officials thought that EPA’s second relaxation of NSR rules (proposed at the time of the survey) “would increase emissions.”

New Jersey joined about a dozen other states in appealing both rulemaking modifications to the NSR rules. Federal courts have so far listened to the states, staying the EPA rule modification that provided exemptions for replacement of equipment on December 24, 2003. The court stayed the rule after a finding of probable harm and probable success with the appeal. Both appeals have been expedited and will be heard later this year.

New Jersey has also indicated to the EPA that it will not implement the relaxed EPA rules in this state. Instead, the DEP has begun to develop a state-specific NSR rule for clean air, known as a State Implementation Plan for Prevention of Significant Deterioration (PSD SIP rule). During the transition from Federal PSD rules to New Jersey-specific PSD rules, the DEP will continue to review and issue PSD permits that do not include any of the new federal exemptions. New Jersey will also revise its Nonattainment New Source Review Rule, commonly referred to as the Emission Offset Rule. These rules will be developed over the next year.

Despite the negative implications of these changes for air quality, the EPA has stated that it will propose additional revisions to the NSR rules. Given its track record, there is every indication that these revisions will relax other elements of the existing rules.

## Ozone

Another area where the federal government has not provided clear leadership on air quality is on ozone. It is true that the new, more protective ozone standards, if achieved, would result in significant improvements to New Jersey's air quality. Unfortunately, these stronger standards have been undermined by the EPA's simultaneous revisions to regulations on emissions making it impossible for those standards to be met.

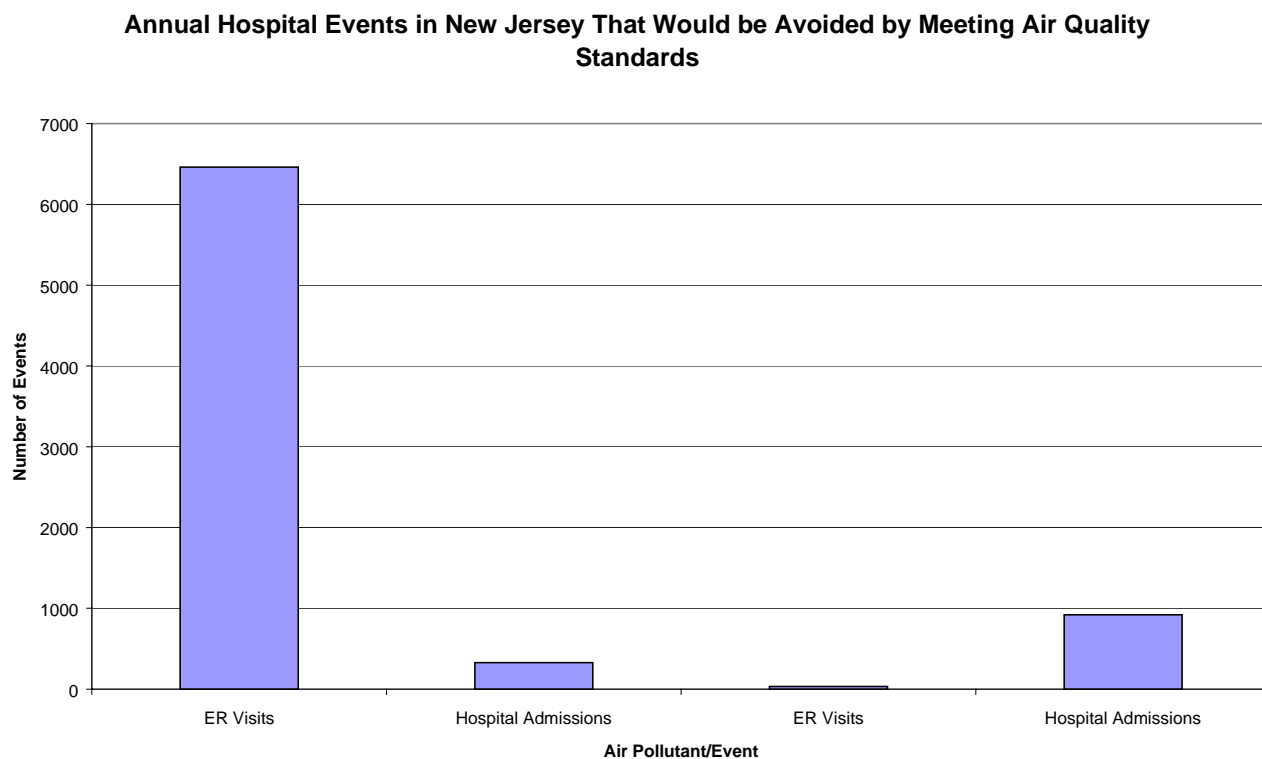


Figure 4. Number of Hospital Events That Would Be Avoided in New Jersey By Meeting Federal Air Quality Standards (Source: NJDEP)

As DEP representatives explained in testimony at recent EPA public hearings, the EPA's soon-to-be proposed Interstate Air Quality Rule (IAQR) Program, which the EPA describes as providing significant support for ozone emission reductions, actually may make it harder for states to meet the new ozone standard. At a minimum, it falls far short of the strong federal action needed to reduce regional upwind emissions enough to enable New Jersey and other states to bring their air quality into attainment with the ozone and fine particulate standards.

Specifically, the proposal's caps on power plant NO<sub>x</sub> emissions are too lax and the deadline for achieving the emission reductions comes too late to be of any use in attainment of the 8-hour ozone standard. Moreover, instead of reducing power plant nitrogen oxide emissions during the

critical summertime ozone season, the proposal provides regulated facilities with wide flexibility to reduce average emissions, which may actually lead to an increase in those emissions.

Currently, northeastern and Mid-Atlantic states have capped ozone season NO<sub>x</sub> emissions from power plants, as they have done since 1999. Beginning in 2004, the EPA will implement a Clinton Administration initiative that will include more upwind states in the cap. Unfortunately, the proposed IAQR Program would undermine this progress by turning this targeted ozone season program into a year-round program. The year-round approach will enable power plants to increase their emissions during the ozone season when wholesale electricity prices are typically highest and then compensate for those higher summertime emissions by running less in the less profitable spring and fall.

Further, the IAQR Program would forego much of the easily available reductions in nitrogen oxide emissions from power plants upwind of New Jersey. Proven and widely available technology can reduce these power plant emissions of nitrogen oxides drastically and cost-effectively. Most coal-fired power plants in New Jersey are either using this technology already, or have committed to installing it in the near future.

Finally, whatever ozone season emission reductions the IAQR will deliver do not take full effect until as late as 2015, far too late to help states meet the 2010 deadline for attaining the ozone standard.

This lack of federal regulatory support on ozone is especially frustrating, as ozone provides a clear example of the troubles with out-of-state transport limiting New Jersey's ability to address its air quality. On average, more than one-third of New Jersey's air pollution comes from out-of-state. Yet on some high ozone days, the EPA's own analysis shows much higher proportions of the ozone may originate from out-of-state causes. Figure 5 below shows that during one particular ozone episode evaluated by the EPA, 55 to 85 percent of the ozone in New Jersey counties came from upwind out-of-state sources. Thus, no matter how diligent or stringent state initiatives are over the coming years, New Jersey will still fail to meet the new standards and fail to protect adequately the health of our citizens, without federal action on upwind facilities.

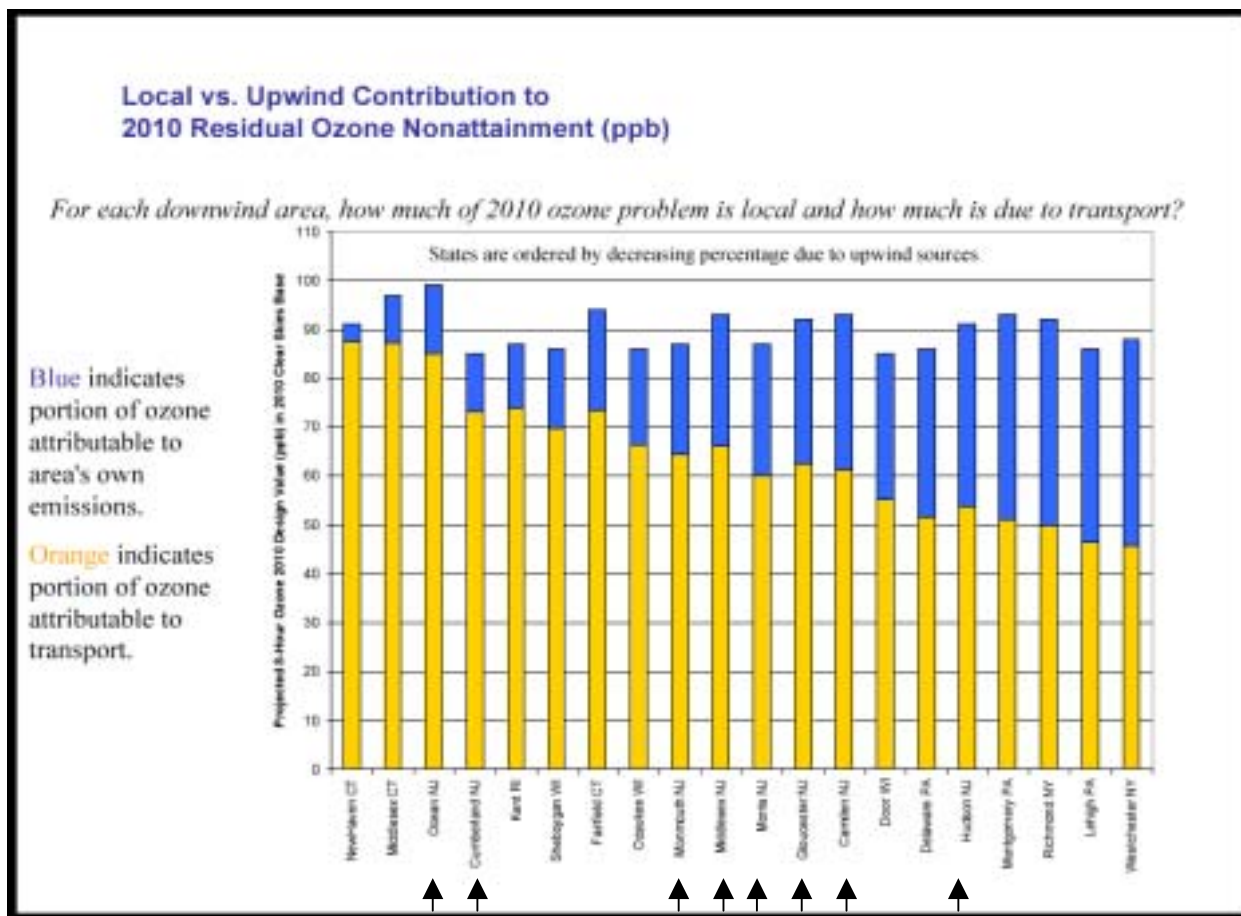


Figure 5. Proportion of Ozone Attributable to Out-of-State Transport During One Particular Ozone Episode Analyzed by EPA. Arrows indicate New Jersey counties (Source: EPA)<sup>3</sup>

Unfortunately, the impacts of failing to meet the federally imposed deadline for the new ozone standard could be severe for state government and businesses. Consequences could include stricter emission offset requirements for new businesses trying to locate in New Jersey, thereby placing the state at a competitive economic disadvantage; loss of federal highway funding critical to maintaining our state infrastructure; and the imposition of federal implementation plans for air quality, thereby removing the flexibility of state-planned air quality initiatives. Moreover, the health care costs and the quality of life costs for New Jersey's residents will continue to be unacceptable.

The EPA's failure to seek greater reductions of NO<sub>x</sub> emissions is especially troubling when the technology to reduce those emissions by 90 percent or more is commonly available. Enforcement of the NSR regulations had already yielded reductions of this scale before the EPA virtually eliminated those rules for existing plants. The weak caps on NO<sub>x</sub> emissions under the IAQR are no substitute for a strong NSR program.

<sup>3</sup> EPA Office of Air and Radiation October 10, 2003 Conference Call with State and Local Partners, "Update on Interstate Transport Rule." Powerpoint presentation.

## **Fine Particulates**

Sulfur dioxide (SO<sub>2</sub>) emissions from upwind power plants account for about half of the fine particulates in New Jersey's air. Scrubbers that can cut those emissions by 90 percent or more have been commonly used for nearly a decade. Again, enforcement of the NSR regulations had led some plants to achieve reductions this large before the EPA virtually eliminated those rules for existing plants.

Furthermore, as is the case with NO<sub>x</sub> emissions and ozone, the IAQR sets weak caps on SO<sub>2</sub> emissions that will not achieve significant reductions nationwide for years. Although the caps purportedly begin in 2010, the EPA's IAQR proposal preserves the ability to use credits from as long ago as 1995 to offset excess emissions above the IAQR's caps. Indeed, enough old credits have already been banked to allow all power plants covered by the IAQR to pollute at their current levels for an entire year, without using any credits under the IAQR. The problem will grow worse as power plants to continue to bank credits in anticipation of the IAQR.

Similar to problems with ozone standards, the EPA has started implementing new federal fine particulate health standards, requiring states to make recommendations on nonattainment area by no later than February 15, 2004. New Jersey agrees that this is important and necessary. However, the EPA has not yet proposed an Implementation Rule for PM<sub>2.5</sub> that would provide the states with the PM<sub>2.5</sub> requirements the nonattainment areas must meet. States need guidance on requirements for New Source Review (NSR) regulations for new and modified stationary sources and Reasonably Available Control Technology (RACT) for existing stationary sources.

Consequently, the EPA has required states to make nonattainment area recommendations without full knowledge of the implications for nonattainment areas. It was for this reason that New Jersey, while making its recommendations on time to meet the federal deadline, reserved the right to modify that recommendation after reviewing the EPA's final PM<sub>2.5</sub> Implementation Rule. The EPA's lack of full disclosure on its intentions for enforcing fine particulate regulations once again raise serious concerns that states will be required to attain new and important health standards without being given the tools to meet those standards.

Furthermore, because medical science has yet to establish a threshold below which there are no adverse health impacts from exposure to particulate matter, it is likely that the current health-based standards for PM<sub>2.5</sub> are not protective enough. The EPA is currently reviewing the existing standards to determine if they need to be revised to protect further human health. New Jersey anxiously awaits a determination on whether or not there will be revised health standards and, if so, whether the EPA will provide the leadership to help states attain these new standards, since out-of-state particulate transport can only be addressed at the federal level.

## **Air Toxics**

The EPA has repeatedly proposed to exempt individual facilities from Clean Air Act requirements to reduce emissions of air toxics. Its proposal would create a loophole to let a facility avoid reducing its emissions of air toxics, based on a self-assessment of the risk that the facility poses to its local community. A facility upwind of New Jersey can use tall smokestacks, or a location in a thinly populated area, however, to take advantage of the loophole. The facility

could have little effect on the health of residents in its immediate neighborhood, while placing a heavy burden on the health of downwind residents, such as New Jerseyans.

This approach would return us to the failed air pollution control strategy of the 1950s, when facilities were designed with tall smokestacks to reduce local impacts of air pollution by sending it far downwind.

When Congress passed the Clean Air Act Amendments of 1990, it authorized the EPA to regulate air toxics from industry through a technology-based approach that targeted source categories, regardless of risk contributed by specific facilities. The promulgation of these Maximum Achievable Control Technology (MACT) standards was to be followed by a risk evaluation a number of years after implementation to ensure that the overall risk to public health from a source category was sufficiently lowered. Recently, the EPA has proposed to exempt specific sources from having to comply with the standards based on their own risk estimates.

Governor McGreevey was able to dissuade the EPA from including this loophole in air toxics standards for several types of facilities. However, the EPA recently allowed industrial, commercial, and institutional boilers to take advantage of the loophole.

New Jersey, along with numerous other states, is extremely concerned about this new approach, which appears to negate the legislative mandate of the Clean Air Act program. It would remove the benefit of establishing a level playing field of air pollution control across the U.S. It also would place a very intensive resource demand on states, which would have to evaluate risk from individual sources that are attempting to exempt themselves from further regulation.

Furthermore, while Congress directed the EPA to develop and to implement a control program for mobile source toxics, it has failed to do this. Mobile sources include cars, trucks, buses, construction equipment, lawn and garden equipment, snowmobiles, and boats. According to an inventory of air toxics compiled by the EPA, these types of sources contribute over 60 percent of the air toxics emissions in New Jersey.

Among these pollutants are potent carcinogens such as benzene, 1,3-butadiene, and formaldehyde. While industrial sources have been reducing their emissions of air toxics over the years, mobile sources have been held to a different regulatory standard. A strong policy must be implemented at the national level in order for the public's exposure to these ubiquitous chemicals to be reduced.

One significant toxic pollutant is mercury. Coal-fired power plants emit about 48 tons of mercury nationwide every year, more than any other industrial sector. Those emissions contribute to brain damage in fetuses and young children.

Under the Clean Air Act, the EPA must set strict emission standards for mercury that apply to each individual coal-fired power plant. Disregarding that mandate, the EPA has once again proposed a weak cap that allows some of the worst polluters to continue their emissions unabated while others reap a windfall from selling excess emission credits. While the Clean Air Act would mandate emissions reductions that would bring nationwide power plant mercury emissions as

low as five tons per year by the end of 2007, the EPA has proposed to delay any reductions until 2010 – when it will cap emissions at 34 tons per year. Further reductions will not occur until 2018 at the earliest and even then the cap will be no lower than 14 tons per year.

Finally, on urban air toxics, the Clean Air Act has specific requirements for the EPA to reduce area source emissions of hazardous air pollutants that pose the greatest threat to public health in the largest number of urban areas by 2000. This deadline has also not been met. Again, the EPA has been shifting the focus away from a comprehensive nationwide approach. Instead, they are providing financial and technical assistance for community risk assessment and risk reduction projects. While this does provide some benefits to individual communities, New Jersey is concerned that these benefits come at the expense of finding solutions that could be applied to all urban communities.

In all these examples, the consistent feature is the need for federal policies that ensure every community, business and state receives equal air quality protection, with none bearing a disproportionate or unfair responsibility to control pollutants that foul our air.

Air pollution is a faceless predator and its victims are too easily overlooked amidst a wash of statistics, yet attention must be paid to the suffering of these anonymous victims. Unlike other resources such as water, where people can choose which resources to use, we have no choice with air – we must breathe the air that surrounds us.

Thus, while Governor McGreevey and other governors continue to entreat the EPA to shoulder its responsibility for clean air, New Jersey remains ever committed to improving air quality at the state level and doing everything in our power to protect the health of our citizens.

## **New Jersey's Air Quality Initiatives**

Governor McGreevey has undertaken a comprehensive series of actions to reduce New Jersey's levels of ozone, fine particulates, and air toxics such as mercury. These pollutants are directly linked to public health problems, including asthma, brain damage, cancer, and premature death. Reducing emissions of these pollutants will improve public health and improve the quality of life for all New Jerseyans. At the same time, these improvements will bring enormous savings in health care costs and in work time lost due to illness.

### **Ozone Initiatives**

In his 2004 State of the State Address, Governor McGreevey called for a 20 percent reduction in emissions of ozone precursors, the pollutants that contribute to smog. That reduction will be essential to bring New Jersey's air into compliance with the federal health standards for ozone. The work in progress to achieve that reduction, as well as the work that has been completed, is described below.

#### Clean Car Legislation

Automobiles in New Jersey contribute 40 percent of the pollution that diminishes our air quality, and more than 80 percent of the airborne carcinogens. For that reason, reducing air pollution from automobiles is vital to clean air.

In January 2004, Governor McGreevey signed legislation that will bring New Jersey the cleanest cars available in the United States. The legislation adopts the California Low Emission Vehicle (LEV) 2 Program. Cleaner cars in New Jersey will reduce automotive emissions of NO<sub>x</sub> and other ozone precursors such as volatile organic compounds (VOCs). The legislation requires the DEP to begin implementing the LEV 2 program in 2009. By 2025, automobile emissions of NO<sub>x</sub>, VOCs, and also air toxics are projected to be about 20 percent lower than they would have been without the LEV 2 program.

The legislation achieves these reductions by requiring carmakers to produce approximately 40,000 gas electric hybrid cars and 128,000 super clean gasoline cars for sale in New Jersey beginning in 2009. For manufacturers that are already working towards these goals, the DEP will provide credits for cars sold between 1999 and 2009. Together, the stricter standards and promotion of cleaner vehicles will reduce smog from automobile sources by up to 19 percent by 2020 and will also reduce air toxics by as much as 20 percent more than federal emission standards.

#### The New York-New Jersey Harbor Deepening Project

The multi-year New York-New Jersey Harbor dredging project, expected to last until 2013, is being performed under the auspices of the U.S. Army Corps of Engineers (USACOE). While this project will create much-needed economic development opportunities for the harbor, it will also generate approximately 3,000 tons of NO<sub>x</sub>.

New Jersey has reached an agreement with the USACOE, New York State, and the EPA that will mitigate the new NO<sub>x</sub> emissions with reductions in NO<sub>x</sub> elsewhere. The mitigation plan includes repowering of tugboats with cleaner engines and the retrofitting of the Staten Island Ferry Fleet

with selective catalytic reduction technology. Two of the repowered tugboats are already working in the harbor. Not only will this agreement generate no net gain of NOx during the harbor deepening project, it will also create long-term reductions in NOx emissions, as the cleaner ferry and tugboat fleet continue to operate.

#### Ozone Transport Commission – NOx and Distributed Generation MOU

Small diesel engines that generate electricity locally, known as “distributed generation,” often emit large amounts of NOx. For each kilowatt-hour of electricity that they generate, these diesel engines emit more than 200 times the NOx that a modern combined-cycle electric generating unit emits. Worse yet, those NOx emissions frequently occur on those summer days when the weather is hottest, electricity demands are the highest, and ozone levels are the worst.

New Jersey worked with 12 other states and the District of Columbia that belong to the Ozone Transport Commission (OTC) to develop a Memorandum of Understanding (MOU) to reduce NOx emissions from distributed generation. The DEP will propose a rule this spring that will set NOx limits on existing diesel engines that generate electricity down to 200 horsepower (hp) (the size of a powerful car engine), as well as new engines generating power down to 50 hp.

Statewide, controlling NOx emissions from distributed generation (and from other sources of NOx to be addressed under the proposal) will reduce emissions by about six tons per day by 2007.

At the same time the DEP is proposing to ease permitting requirements for clean distributed electric generation, such as fuel cells and clean micro turbines. The DEP will be looking for similar strategies in the next two years to create emission reduction requirements for all size source operations, including relatively small sources, while at the same time creating incentives for new clean processes.

#### Regulations on Commercial and Consumer Products and Portable Fuel Containers

The DEP has adopted model OTC rules to control the emissions of volatile organic compounds (VOCs) and toxics from consumer products and establish requirements that apply to persons who are manufacturers, distributors, suppliers and retailers of consumer products. These proposed new rules and amendments apply to certain chemically formulated consumer products that have VOCs in their formulation (such as hair spray, insecticides, and cleaners), as well as portable fuel containers (gas cans), from which VOCs may be emitted when gasoline or other fuels are poured into or out of the container or stored in the container. VOCs are a significant precursor to ozone formation.

The estimated statewide VOC emission reductions from the implementation of the consumer products portion of this proposal are 12 tons per day in 2007. The estimated statewide VOC emission reductions from the portable fuel container portion of this proposal are approximately six tons per day in 2007.

### Regulations on Solvent Cleaning, Mobile Equipment Repair and Refinishing Operations and Gasoline Transfer Operations

On April 30, 2003, the DEP adopted model OTC rules establishing new requirements for solvent cleaning operations, mobile equipment repair and refinishing operations, and gasoline transfer operations, in order to prevent or decrease emissions of VOCs from these operations by requiring such changes as more efficient spray guns. The estimated statewide VOC emission reductions from the implementation of the solvent cleaning operation portion of these rules are four tons per day by 2005. The estimated statewide VOC emission reductions from implementation of the surface coating operations at mobile equipment repair and refinishing facilities portion of these rules are nine tons per day by 2005. The estimated statewide VOC emission reductions from the implementation of the gasoline transfer operations portion of these rules are approximately 14 tons per day by 2007.

### Architectural Coatings and Consumer Products

In July 2003, the DEP proposed model OTC rules that establish standards for architectural coatings (paints, varnishes, stains and traffic coatings) for manufacturers, suppliers, distributors, retailers and persons who apply architectural coatings. The estimated statewide VOC emission reductions from implementation of these rules are 25 tons per day by 2005. We expect to adopt this rule by early this summer.

### **Fine Particulate Initiatives**

Governor McGreevey and the DEP are working on an aggressive proposal to address fine particulates and other emissions from diesel engines around the state. Diesel engines are especially important to address because even though some new diesel engines are cleaner and may contribute less to air quality problems than their predecessors, diesel engines tend to remain in service for a long time. Thus, most of the current fleet of diesel-powered trucks, buses and off-road equipment emit high levels of fine particulates.

Filters, other devices, and cleaner-burning diesel fuels are available to reduce emissions from older diesel engines. Retrofitting diesel engines with these modern-day pollution controls carries costs. However, these costs are small compared to the overall value of the vehicles and equipment. More importantly, the costs to human health of allowing current air pollution to continue unabated far exceed the costs of installing those pollution controls. Furthermore, allowing some discretion in matching retrofit technologies to engine operations can reduce the overall cost of installing pollution controls significantly.

The Governor's aggressive proposal will provide significant public health and environmental benefits statewide. The plan specifically includes:

#### Diesel Retrofits

The Governor's plan would eliminate the prohibition on requiring retrofits of diesel vehicles. Current New Jersey law (N.J.S.A. 26:2C-8.4) prohibits the state from requiring owners of in-use diesel-powered vehicles to install pollution controls to reduce emissions. Lifting that prohibition for trucks, buses, and construction and loading equipment is an essential starting point to reducing fine particulate emissions from the diesel sector.

Under the proposed plan, the DEP would seek targeted retrofits of the dirtiest engines, so that not all vehicles and equipment would necessarily have to be retrofit. The retrofits would be focused on certain categories of vehicles and equipment in certain model years within the fleet, to obtain the most cost-effective reduction in emissions.

#### Stronger Diesel Smoke Inspection Program

Existing requirements for inspections of emissions of diesel vehicles would be updated and strengthened. The DEP would review and update the Pass/Fail Standards for these inspections. Inspection and enforcement authority would also be expanded to include a check for retrofit installation on designated vehicles during the smoke inspection. In addition, State Police would establish a hotline (similar to the "#77" for reports of aggressive driving) to receive reports of excessive smoke/idling.

#### Idling and Queuing

Idling of trucks and buses, while a seemingly minor point actually can have a significant impact on local air quality and be a significant source of fine particulate emissions. Under the Governor's new plan, the DEP would, in consultation with the Motor Vehicle Commission (MVC), tighten idling exemptions in the current rule and increase the penalty structure. MVC's adoption of the new rule into their code would be required to facilitate enforcement by state and local police. The New Jersey Department of Transportation (DOT) would identify points of diesel vehicle congestion, queuing, and excessive idling and post idling restriction signs, as appropriate and after consultation with local officials.

#### School Buses

Also under the Governor's plan, the New Jersey Department of Education would adopt rules requiring school administrators to post idling and queuing instructions and to report violations. The MVC would enhance inspections of exhaust systems and cabin seals. Monies from the diesel risk mitigation fund would be used to investigate use of air filters, positive pressure systems, alternate tail pipe designs, modified diesel fuels, and other innovative approaches to reduce particle emissions.

In addition to these new diesel proposals, the Governor and the DEP have also been working on a number of other initiatives to reduce fine particulates.

#### Particulate Matter Nonattainment Areas

On February 13, 2004, DEP Commissioner Bradley M. Campbell submitted recommendations to the EPA for which areas of New Jersey should be included in a nonattainment area designation for fine particulate matter (PM<sub>2.5</sub>) either because they exceed, or contribute to the exceedence of, the new 24-hour or the annual PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS). Since New Jersey is presently in compliance with the 24-hour PM<sub>2.5</sub> standard, the recommendation only contains boundaries for an annual PM<sub>2.5</sub> nonattainment area.

In July of 1997, the EPA promulgated two new health-based air quality standards for PM<sub>2.5</sub>. One standard sets a maximum of 65 micrograms of PM<sub>2.5</sub> per cubic meter, based on an average measurement over a 24-hour period. The second standard is 15 micrograms per cubic meter, based on an average reading over the course of a calendar year.

The EPA has until December 31, 2004 to take action on the state's PM 2.5 nonattainment area recommendations and to finalize nonattainment area designations for fine particulate matter.

New Jersey is currently monitoring violations of the annual PM<sub>2.5</sub> standard in Hudson and Union Counties. Further analysis by the DEP provides evidence that Bergen, Essex, Mercer, Middlesex, Monmouth, Morris, Passaic and Somerset Counties may contribute significantly to the monitored violations in New Jersey, and therefore should be included in any nonattainment area. Based on this information, Commissioner Campbell recommended that all 10 of these counties be included in New Jersey's nonattainment area.

Although the nonattainment area recommendation only encompasses 10 of the state's 21 Counties, New Jersey intends to propose reasonable particulate matter control measures statewide for all relevant stationary and mobile sources. This proposal will allow New Jersey to achieve PM<sub>2.5</sub> reductions throughout New Jersey, as well as in the Northern New Jersey nonattainment area.

### **Air Toxic Initiatives**

Aside from ozone precursors and fine particulates that contribute to respiratory and cardiovascular health issues, Governor McGreevey is also committed to addressing toxic air pollutants that can have neurological and cancerous impacts.

### **Mercury Regulations**

In January 2004, Governor McGreevey announced that New Jersey was proposing new mercury emissions standards that are far more protective than the current federal regulations. The rules will reduce in-state mercury emissions by over 1,500 pounds annually and reduce emissions from New Jersey's coal-fired power plants by up to 90 percent in 2007. The New York Academy of Sciences (NYAS) recently lauded the New Jersey initiative as the example the EPA should follow in order to protect public health.

NYAS stated, "If New Jersey's rules were enacted nationally, annual mercury emissions from coal-fired power plants alone would decline from approximately 48 tons to about five tons. And hundreds of thousands of children would be spared the needless suffering caused by exposure to mercury."

The EPA's proposed mercury rules fail to control emissions by deadlines set in the Clean Air Act (in some cases extending deadlines for achieving mercury reductions to 2018 or later) and would allow power plants to emit three times or more the amount of mercury as Governor McGreevey's approach would allow. Moreover, the EPA rules extend emission trading – a useful pollution control tool for certain common air pollutants like sulfur dioxide – to mercury, an air toxic, which will allow for mercury hotspots to continue endanger public health.

Under our proposed rules, New Jersey's 10 coal-fired boilers will have to keep 90 percent of the mercury in coal from being emitted into the air or to meet a strict regulatory limit that achieves comparable reductions in 2007. A company that commits to a substantial multi-pollutant

reduction strategy – including NOx, sulfur dioxide, and fine particulates as well as mercury – may comply by 2012, as long as at least half the reductions are achieved in 2007.

In addition, municipal solid waste incinerators must either reduce emissions by 95 percent below 1990 levels within seven years through improvements in air pollution control systems or reduce mercury in solid waste to achieve the same level of mercury reductions. Iron and steel scrap-melters will have five years to remove mercury from the scrap metal or add mercury-removing air pollution control to their furnaces, to achieve at least a 75-percent reduction in mercury emissions. This would be the first statewide emission limit in the nation for mercury emitted by iron and steel melters.

While these rules provide significant public health benefits from mercury reductions, there will also be other benefits, since many of the mercury control technologies also reduce emissions of other pollutants, such as fine particulates, as well.

#### Camden Air Toxics

This year, the DEP has partnered with local community activists to address specific air pollution concerns in Camden. As part of this initiative, the DEP launched a pilot “Bucket Brigade” program that allows community members of Camden’s Waterfront South community to collect air samples that will then be tested to measure pollution exposure in their neighborhoods. The samples are tested for sulfur-containing, odorous substances as well as VOCs that can endanger public health or simply decrease quality of life for community residents. The larger Air Toxics program in Camden is also addressing fine particulate matter and is focused on identifying nearby industrial and manufacturing emission sources and developing strategies to reduce these emissions.

### **Enforcement and Other Initiatives**

In addition to new rulemaking and other initiatives, Governor McGreevey’s commitment to cleaner air has translated into strong enforcement actions geared toward minimizing emissions of a variety of air pollutants – including ozone precursors, fine particulates and air toxics – in the state. These include:

#### PSEG Fossil

In July 2002, New Jersey and federal authorities finalized a consent decree with PSEG Fossil, Inc. that required the company to install more than \$300 million in new pollution controls at its Jersey City (Hudson County) and Hamilton Township (Mercer County) power plants. These new controls will reduce certain emissions by more than 80 percent. In addition, PSEG spent \$400 million to complete the repowering to natural gas and use of more efficient electric generation equipment at its Bergen County plant in Ridgely Park. The company also paid a civil penalty of \$1.4 million and spent \$6 million on three additional projects that also will improve air quality in New Jersey. The first of the new air pollution controls will be operational this summer.

When all of the new pollution controls are installed, the company’s combined emissions from all its New Jersey facilities of sulfur dioxide (SO<sub>2</sub>) will be reduced approximately 90 percent and its emissions of nitrogen oxides (NO<sub>x</sub>) will decrease by about 80 percent. These decreases represent

about 30 percent of all the SO<sub>2</sub> and 20 percent of all the NO<sub>x</sub> emitted annually from plants, factories and other stationary pollution sources in New Jersey.

#### Conectiv Energy

In May 2002, the DEP reached an enforcement settlement with Atlantic City Electric Company and Conectiv Atlantic Generation, Inc. (Conectiv), requiring the company to reduce smog-forming pollution at six of its generating stations located in southern New Jersey. The agreement required the company to install, test, maintain and monitor new pollution controls to reduce nitrogen oxide emissions at the Carls Corner Generating Station in Upper Deerfield Township, the Middle Generating Station in Rio Grande Township, the Missouri Generating Station in Atlantic City, the Cedar Generating Station in Manahawkin Township, the Mickleton Generating Station in Greenwich Township, and the Deepwater Generating Station in Pennsville Township.

The settlement also required Conectiv to pay \$2 million in penalties to the state, \$1 million of which was used to fund an urban re-forestation project in the affected airshed. This \$1 million tree-planting project in Camden will help improve air quality and also improve the quality of life in Camden's neighborhoods, by planting approximately 1,500 trees.

#### Martins Creek Power Plant Shutdown

In May 2003, New Jersey announced a landmark agreement with PPL Generation, LLC (PPL), to shut down two coal-fired units at its Martins Creek power plant in Northampton County, Pennsylvania and to take other actions to reduce emissions of air pollutants from the plant significantly. The final agreement will lead to a reduction of 80 percent or more than 20,000 tons per year by 2007, of the plant's sulfur dioxide emissions. The agreement also will lead to reductions of NO<sub>x</sub>, mercury, and fine particulate emissions.

The agreement marked the first time that a state was able to negotiate the shutdown of a coal-fired power plant outside its borders and was an essential complement to New Jersey's efforts to set more protective emission requirements for facilities inside the state. The impact of the plant's sulfur emissions were especially felt in Warren County, New Jersey, where sulfur emissions from the plant played a significant role in local air quality concerns.

#### Coastal Eagle Point Oil Company

In October 2003, DEP announced that Coastal Eagle Point Oil Company, Gloucester County, signed a federal consent decree to settle multiple state and federal air pollution violations that will significantly lower harmful air emissions for the future, fund a \$1 million beneficial environmental project and award the state a \$1.25 million fine. The company agreed to more stringent environmental safeguards that will greatly reduce air pollution and provide those living in Gloucester County better air quality.

As part of the consent decree, Coastal (which has since been purchased by Sunoco) agreed to invest \$3 to \$7 million to upgrade the plant's environmental controls by 2008. The upgrades will reduce harmful air emissions, including nitrogen oxides (NO<sub>x</sub>), sulfur dioxides, fine particulates and benzene, a hazardous air pollutant. The upgrades also will enhance leak detection and repair at the plant, and identify and reduce flaring incidents that result in emission releases.

In addition, the settlement includes an innovative \$1million of funding for an environmentally beneficial project designed to eliminate diesel emissions from idling trucks at the Paulsboro Travel Center, located at Exit 18A of Interstate 295, Gloucester County and at another site to be determined. The Northeast States for Coordinated Air Use Management (NESCAUM) will install electrical technology manufactured by IdleAire to approximately 100 parking spaces at the travel center. The electrical hookups will significantly reduce the emission of ozone causing pollutants such as NOx, particulate matter and hydrocarbons by allowing trucks to plug in for utility services rather than idle their diesel engines overnight to generate power.

#### Atlantic States Cast Iron Pipe

Also in October 2003, the DEP settled with Atlantic States Cast Iron Pipe in Phillipsburg, New Jersey to resolve multiple violations of the New Jersey Air Pollution Control Act. The settlement included a \$1 million air penalty payment. Under the settlement agreement, Atlantic States reduced emissions of volatile organic compounds, which contribute to the formation of ozone, by an estimated 350 tons annually. This reduction was achieved by substituting water-based paint for the asphalt-based paint typically used in the industry to coat cast iron pipes. The facility also must evaluate the type of emission controls or other measures needed to meet its air pollution emission limits that will be specified in the new permit.

#### Fairmount Chemical

New Jersey called for an immediate shut down of operations at the Fairmount Chemical Company, Inc. located in the city of Newark, Essex County, because the facility was violating clean air regulations by emitting unknown and unpermitted amounts of hydrazine, a hazardous air pollutant. Although Fairmount was the only facility in Essex County known to be using hydrazine as part of its operations, a federal air toxics assessment that is based on emission inventories revealed that long-term exposure to hydrazine in the city of Newark was estimated to be 10 to 50 times above the level generally accepted as a significant cancer risk. Long-term exposure to hydrazine – a carcinogen – can cause damage to the liver, kidney, and reproductive organs.

#### Enforcement Sweeps

In October 2002, responding to citizen concerns and reinforcing his commitment to provide equal protection to New Jersey's urban communities, the DEP conducted a weeklong environmental enforcement sweep in the city of Camden. Working with county officials, the New Jersey State Police, and the EPA, the DEP mobilized more than 70 inspectors targeting over 700 facilities to ensure city-wide compliance with a multitude of environmental laws including the state's Air Pollution Control Act.

Based on the 126 air compliance inspections at applicable facilities, the DEP found a total of 30 violations for failure to receive proper permits for equipment. Once these facilities obtained the proper permits, the DEP got a better understanding of the total amount and type of pollutants being emitted from the various facilities in the Camden area. Furthermore, the DEP issued 19 violations for operating equipment improperly or for not monitoring and providing records in accordance with existing air permits.

Similarly, in December 2003, with widespread cooperation from area businesses, the local chamber of commerce and citizen groups, the DEP celebrated the success of its latest enforcement sweep in Paterson. The sweep included inspections at more than 1,000 facilities, offered nearly 100 voluntary compliance assistance visits and uncovered 159 major environmental violations. These concerted sweeps help businesses understand how to comply with laws and help to minimize potential future air emission violations.

#### Out-of-State Litigation

New Jersey has taken action both independently and with other states against out-of-state power plants that made significant modifications in the past and did not install best available control technology (BACT), as required by the New Source Review (NSR) provision of the Clean Air Act. For example, several states reached a settlement with Virginia Electric Power Company (VEPCO) for alleged air pollution violations. As part of this settlement, New Jersey received a \$2.5 million payment for mitigation projects, including the retrofit of particulate traps on NJ Transit diesel buses. 300 conventional diesel buses will be in service by next year using the catalyzed particle filters to reduce fine particulate emissions.

In another example, in 2003 a US District Court in Ohio found the Ohio Edison Company guilty of all 11 counts of NSR violations at its Sammis generating plant. This facility is a massive coal-fired power plant on the Ohio River with 7 coal-fired boilers. New Jersey was one of several states that joined in suing Ohio Edison. This case is now entering the remedy phase, where the judge will determine what air pollution control must be installed and what penalties must be paid to the litigating states for mitigation projects.

New Jersey is also party to ongoing suits alleging NSR violations at plants run by American Electric Power and Cinergy.

#### Regional Greenhouse Gas Initiatives

The Governors of several northeastern states – including New Jersey, Connecticut, Vermont, New Hampshire, Delaware, Maine, Massachusetts and Rhode Island – are working together on a regional strategy to reduce greenhouse gas emissions. These states contain approximately one-sixth of the nation's population, making the regional effort a critical national precedent on how to deal with global warming. This regional action is especially important given the Bush Administration's repeatedly demonstrated lack of interest in addressing this critical environmental threat.

The initiative will involve developing a cap-and-trade emissions trading system that will cover at least carbon dioxide emissions from power plants and may be expanded to include other sectors and other greenhouse gases. The overall goal of the group is to reach an agreement by April 2005 on a flexible, market-based cap-and-trade program.

#### Teterboro Air Quality Study

In September 2003, Governor McGreevey announced that the DEP would oversee an independent study of ambient air quality at and around Teterboro Airport. Working with county and state officials, the Governor negotiated with the Port Authority to fund \$300,000 of the estimated \$450,000 cost of the study. The New Jersey Meadowlands Commission agreed to fund

the remaining \$150,000. The DEP is currently working with the Coalition for Public Health and Safety, a group of municipalities that sought the study, to develop detailed plans for the study.

#### Urban Tree Planting

Governor McGreevey has made the commitment to plant thousands of trees in New Jersey's urban communities. Already, through a cooperative agreement between the DEP and the Board of Public Utilities, more than 1,500 trees have been planted in Trenton and Paterson. This year, BPU has provided another \$3 million to plant more than 4,000 new trees in Elizabeth, Paterson, Trenton, Camden, Orange, Passaic and other communities. Trees not only substantially reduce temperatures in urban areas, which otherwise can be much hotter than surrounding areas (a phenomenon known as the "Heat Island" effect), but they also absorb several air pollutants. This suite of benefits not only improves health and quality of life for urban dwellers but also beautifies communities and increases property values.

## **Conclusion**

Today, New Jersey fails to meet the new federal air quality health standard for ozone concentrations. In 2010, the federal attainment deadline for the standard, New Jersey will still fail to meet the standard – unless the federal government takes an active role now in protecting air quality. Too much of New Jersey's air pollution comes from out-of-state, upwind transport for the state to address these problems on our own.

Moreover, New Jersey, and every state in the nation, needs stronger federal support to improve air quality and to decrease concentrations of many other air pollutants, including fine particulates and air toxics. The answer is simple – the federal government must enforce stringent regulations and give states the regulatory tools needed to crackdown on interstate transport of air pollutants and to meet the protective health standards. The EPA must halt the rollbacks of critical environmental regulations.

The problems of air pollution are clear and the consequences for hundreds of thousands of New Jersey's residents are all too real. Children, families and whole communities are suffering from asthma, respiratory ailments, neurological disorders and generally suffering from diminished quality of life.

While we call upon the federal government for renewed leadership, New Jersey remains committed to requiring cost effective air quality improvements within its borders and providing New Jersey's residents with the quality of life and the cleaner air they deserve.